

**16TH ANNUAL – CA EMS FOR
CHILDREN CONFERENCE
November 7, 2010**

Current Street Drugs

**Karl A. Sporer, MD FACP FACEP
EMS Medical Director, Alameda County**

MDMA: Street Names

- ▶ Ecstasy
- ▶ X
- ▶ E
- ▶ XTC
- ▶ Molly



What is MDMA?

Methylenedioxy-n-methylamphetamine



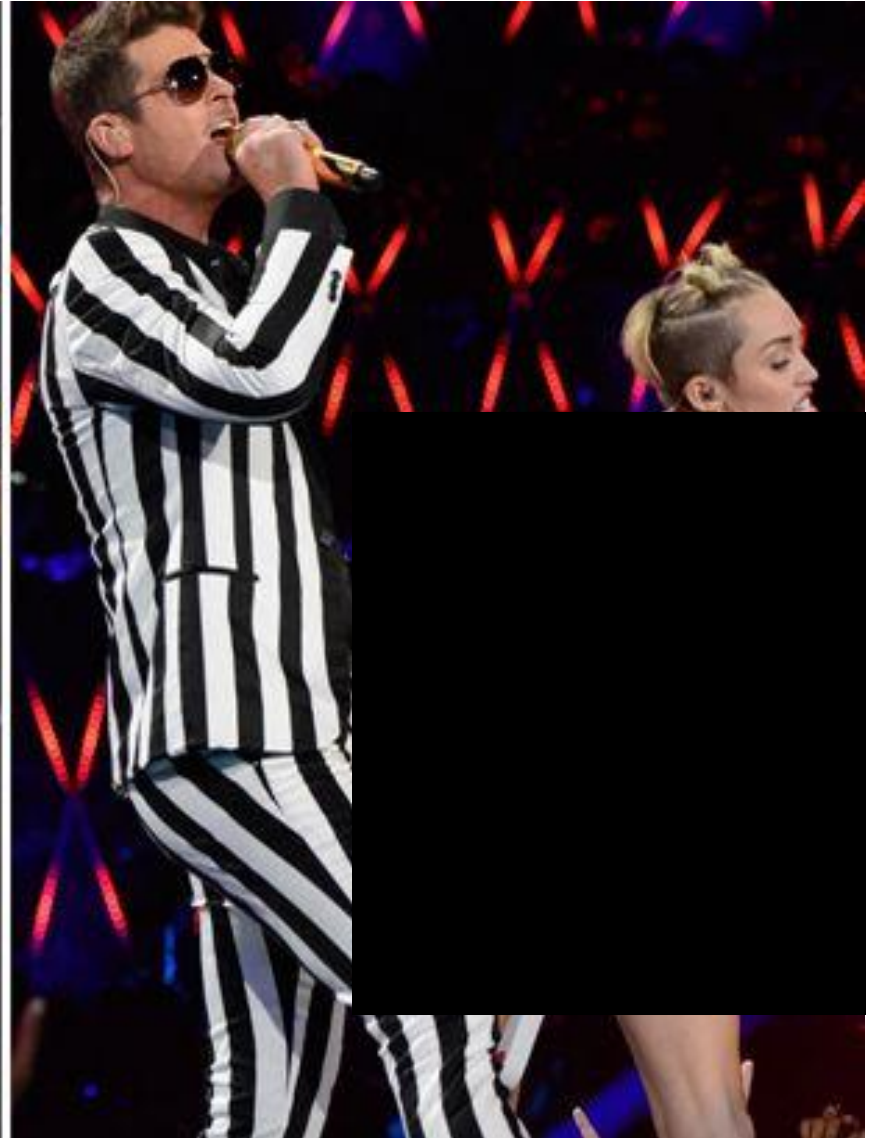
What is MDMA?

Methylenedioxy-n-methylamphetamine





Miley Cyrus VMA Awards 2013









Ecstasy

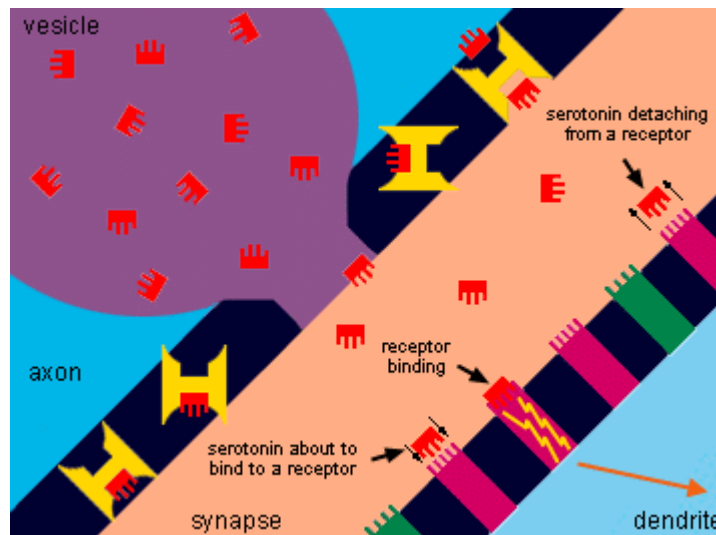
Reuptake inhibitor of serotonin,
norepinephrine, dopamine

Promoter of release of these neurotransmitters

Mild Amphetamine-like properties

Empathogenic properties

Serotonin Transmission



Ecstasy

Clinical Presentation:

Awake

Tachycardia

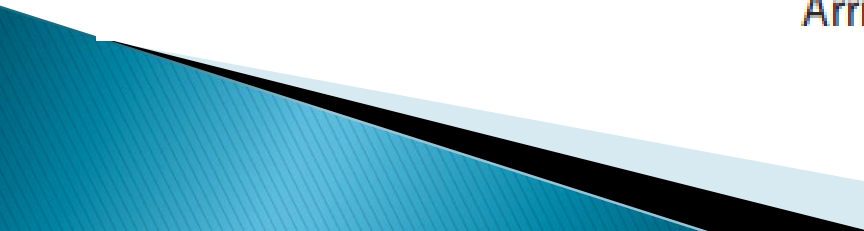
Hypertension

Diaphoresis

Bruxism

Ecstasy– Adverse Events

- ▶ Serotonin Syndrome
 - AMS, Agitation, Hyperthermia
- ▶ Hyponatremia
 - AMS, Seizures, Female



Ecstasy– Adverse Events

- ▶ Serotonin Syndrome
 - Occur Sporadically
 - Usually with a large rave
 - Tx with supportive care and aggressive treatment of hyperthermia

Ecstasy– Adverse Events

▶ Ecstasy Related Hyponatremia

- 73 cases
- Female predominance (OR 4.0)
- Presented as seizures or AMS
- Rosenson J, Smolin C, Sporer KA, Blanc PD, Olson KR. Patterns of Ecstasy Associated Hyponatremia in California. Annals of Emergency Medicine 2007;49:169–171

Bath Salts



- ▶ May 29, 2012
- ▶ A Florida man who was suspected to be high on "bath salts" last month when he was shot and killed by police after refusing to stop chewing a homeless man's face.



Khat Plant



- ▶ Monoamine Alkaloid called Cathinone
- ▶ Amphetamine like stimulant
- ▶ Djibouti, Ethiopia, Somalia and Yemen

Bath Salts

- ▶ Substituted Cathinones
- ▶ Effects Similar to Amphetamine and Cocaine
 - Methylenedioxypyrovalerone (MDPV)
 - Methylone
 - Mephedrone

▶ Bath Salts

▶ 9 State Experience

- ▶ 1693 cases
- ▶ 68% male
- ▶ Common Clinical Features
 - ▶ Agitation 62%
 - ▶ Tachycardia 55%
 - ▶ Hallucinations 33%

A 9-state analysis of designer stimulant, "bath salt,"
hospital visits reported to poison control centers.

Warrick BJ, Hill M, Hekman K, et al. Ann Emerg Med. 2013
Sep;62(3):244-51.

▶ Bath Salts

▶ 9 State Experience

- ▶ Major Medical Effect 16%
- ▶ Death 0.6%

▶ Dangerous Bath Salts Drugs Linked To Nearly 23,000 Hospital ER Visits In 2011

[A 9-state analysis of designer stimulant, "bath salt," hospital visits reported to poison control centers.](#)

Warrick BJ, Hill M, Hekman K, et al. Ann Emerg Med. 2013 Sep;62(3):244–51.

Oral Opiate Overdoses

- ▶ Surpassed Motor Vehicle Crashes as the the Leading
- ▶ Preventable Cause of Death in the US

- ▶ Centers for Disease Control and Prevention, National Center for Injury Prevention and
- ▶ Control. [updated 19 Dec 2011; cited 5 Mar 2012] www.cdc.gov/ncipc/wisqars.



Oral Opiate Overdoses

- ▶ **Drug Poisoning Deaths in the U.S. Doubled Between 2001 and 2010**
- ▶ **17,000 Deaths Per Year**
- ▶ **More than Cocaine and Heroin Related Deaths Combined**
- ▶
 - ▶ Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. CDC WONDER Online Database, 2012.
 - ▶ Beletsky LB, Rich JD, Walley AY. Prevention of fatal opioid overdose. *JAMA*. 2013;308(180): 1863–1864.
 - ▶ Harvard Medical School. Painkillers fuel growth in drug addiction: Opioid overdoses now kill more people than cocaine or heroin. *Harvard Ment Hlth Let*. 2011;27(7):4–5.

Oral Opiate Overdoses

- ▶ Opioids: the most commonly prescribed medication in the US
- ▶ Methadone Prescription– 800% increase in past 10 years
- ▶ McLellan AT, Turner BJ. Chronic noncancer pain management and opioid overdose: time to change prescribing practices. *Ann Intern Med.* Jan 19;152(2):123–124.

Oral Opiate Overdoses

- ▶ Significant Increase in the Medical Prescription of Oral Opiates.
- ▶ Oxycontin 400%
- ▶ Fentanyl 200%
- ▶ Gilson AM, Ryan KM, Joranson DE, Dahl JL. A reassessment of trends in the medical use and abuse of opioid analgesics and implications for diversion control: 1997–2002. *J Pain Symptom Manage*. Aug 2004;28(2):176–188.

Oral Opiate Overdoses

- ▶ Incidence of opioid analgesic abuse in the US increased
 - 600 000 in 1990
 - 2.4 million in 2001
- ▶ This is at least double the number of existing heroin users.
- ▶ Heroin has ceased to be the predominant street drug and is being replaced by oral opiates.
- ▶ Fischer B, Rehm J. Illicit opioid use in the 21st century: witnessing a paradigm shift? *Addiction*. Apr 2007;102(4):499–501.

Oral Opiate Overdoses

- ▶ Ranked second to only marijuana as the most prevalent category of drug abuse (excluding alcohol)
- ▶ Category with the largest number of new initiates.
- ▶ Coben JH, Davis SM, Furbee PM, Sikora RD, Tillotson RD, Bossarte RM. Hospitalizations for poisoning by prescription opioids, sedatives, and tranquilizers. *Am J Prev Med.* May;38(5):517–524.

Oral Opiate Overdoses

- ▶ Patterns of use among fatal pharmaceutical OD's
- ▶ Pharmaceutical diversion–63.1%
- ▶ Doctor shopping– 21.4%
- ▶ Hall AJ, Logan JE, Toblin RL, et al. Patterns of abuse among unintentional pharmaceutical overdose fatalities. *Jama*. Dec 10 2008;300(22):2613–2620.

Emergency Medicine

- ▶ 12% of Total Opioid Prescriptions
- ▶ 3rd among Specialties



Volkow ND, McLellan TA, Cotto JH. Characteristics of opioid prescriptions in 2009. *JAMA*. 2011;305:1299–1301.

Oral Opiate Overdoses

- ▶ **Prevention Will Require a Much Different Approach**
 - Limiting Use in Chronic Pain
 - Prescription Monitoring Program
 - Prescription Naloxone

Note: These guidelines do not replace clinical judgment in the appropriate care of patients nor are they intended to provide guidance on the management of patients while they are in the ED.

In the management of patients with acute or chronic non-cancer pain discharged from an emergency department,

1. Consider short-acting opioid analgesics for the treatment of acute pain only when the severity of the pain is reasonably assumed to warrant their use.
2. Start with the lowest possible effective dose if opioid analgesics are considered for the management of pain.
3. Prescribe no more than a short course of opioid analgesics for acute pain . Most patients require no more than three days.
4. To assess for opioid misuse or addiction, use targeted history or validated screening tools. Prescribers can also access the New York State Controlled Substance Information (CSI) on Dispensed Prescriptions Program for information on patients' controlled substance prescription history.
5. Avoid initiating treatment with long-acting or extended-release opioid analgesics.
6. Address exacerbations of chronic or recurrent pain conditions with non-opioid analgesics, non-pharmacological therapies, and/or referral to specialists for follow-up, all as clinically appropriate.
7. Avoid when possible prescribing opioid analgesics to patients currently taking benzodiazepines and/or other opioids. Consider other risk factors for consequential respiratory depression.
8. Attempt to confirm with the treating physician the validity of lost, stolen, or destroyed prescriptions. If considered appropriate, replace the prescription only with a one- to two-day supply.
9. Provide information about opioid analgesics to patients receiving a prescription, such as the risks of overdose and dependence/addiction, as well as safe storage and proper disposal of unused medications.

TOXICOLOGY/CONCEPTS

Prescription Naloxone: A Novel Approach to Heroin Overdose Prevention

Karl A. Sporer, MD

Alex H. Kral, PhD

From the University of California, San Francisco, Department of Medicine, Section of Emergency Medicine, and the Treatment Research Center (Sporer), the Urban Health Program, RTI International and the University of California, San Francisco, Department of Family and Community Medicine (Kral), San Francisco, CA.

The mortality and morbidity from heroin overdose have increased in the United States and internationally in the last decade. The lipid solubility allows the rapid deposition of heroin and its metabolites into the central nervous system and accounts for the “rush” experienced by users and for the toxicity. Risk factors for fatal and nonfatal heroin overdoses such as recent abstinence, decreased opiate tolerance, and polydrug use have been identified. Opiate substitution treatment such as methadone or buprenorphine is the only proven method of heroin overdose prevention. Death from a heroin overdose most commonly occurs 1 to 3 hours after injection at home in the company of other people. Numerous communities have taken advantage of this opportunity for treatment by implementing overdose prevention education to active heroin users, as well as prescribing naloxone for home use. Naloxone is a specific opiate antagonist without agonist properties or potential for abuse. It is inexpensive and nonscheduled and readily reverses the respiratory depression and sedation caused by heroin, as well as causing transient withdrawal symptoms. Program implementation considerations, legal ramifications, and research needs for prescription naloxone are discussed. [Ann Emerg Med. 2007;

Dope Project

- ▶ Shoot up with a buddy
- ▶ Encourage use of 911
- ▶ Education about Polypharmacy
- ▶ Education for At-Risk Periods
- ▶ Prescription Naloxone





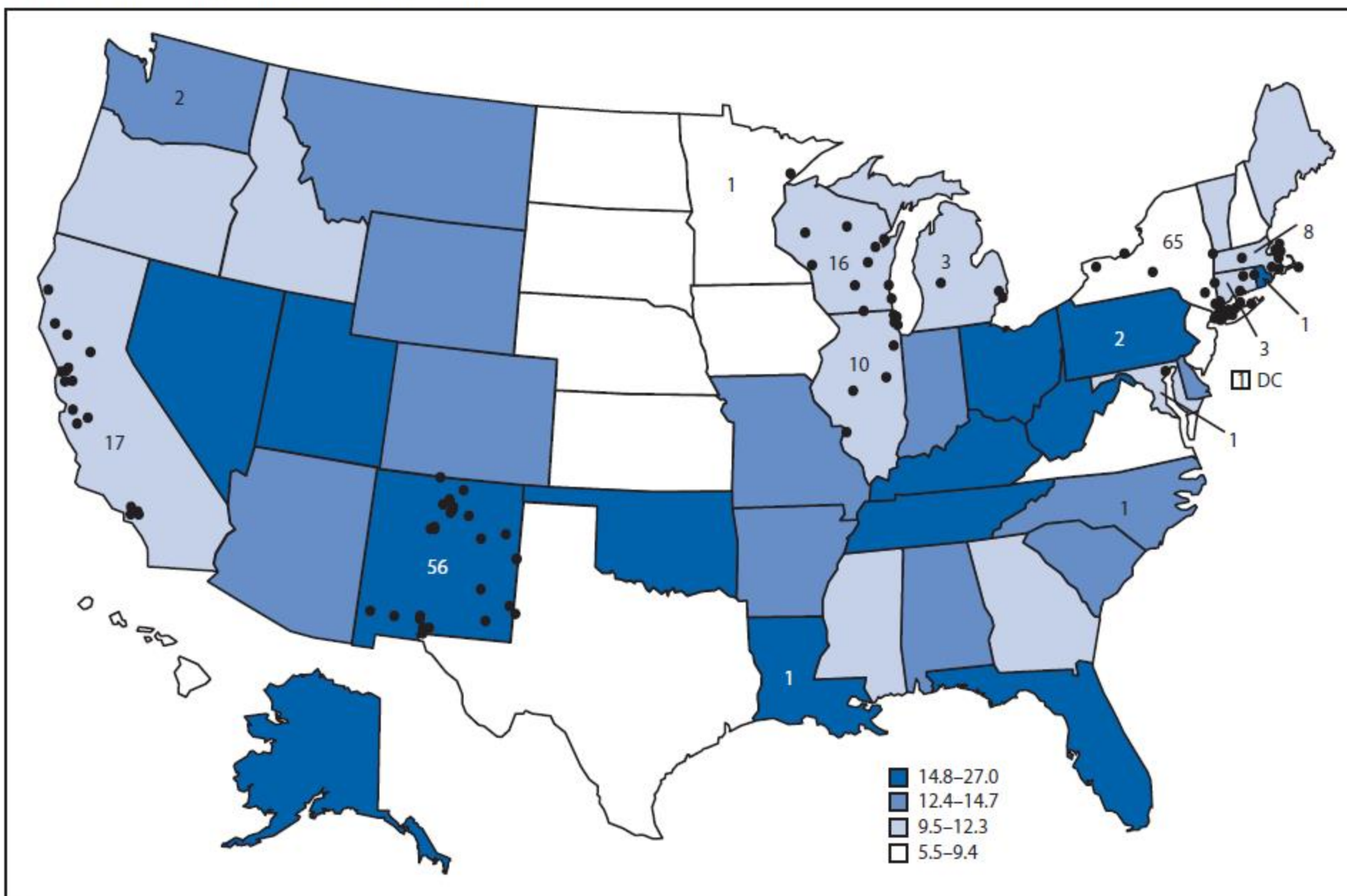
Community-Based Opioid Overdose Prevention Programs Providing Naloxone — United States, 2010

Drug overdose death rates have increased steadily in the United States since 1979. In 2008, a total of 36,450 drug overdose deaths (i.e., unintentional, intentional [suicide or homicide], or undetermined intent) were reported, with prescription opioid analgesics (e.g., oxycodone, hydrocodone, and methadone), cocaine, and heroin the drugs most commonly involved (1). Since the mid-1990s, community-based programs have offered opioid overdose prevention services to persons who use drugs, their families and friends, and service providers. Since 1996, an increasing number of these programs have provided the opioid antagonist naloxone hydrochloride, the treatment of choice to reverse the potentially fatal respiratory depression caused by overdose of heroin and other opioids (2). Naloxone has no effect

shelters, and substance abuse treatment programs). These services include education regarding overdose risk factors, recognition of signs of opioid overdose, appropriate responses to an overdose, and administration of naloxone.

To identify local program locations and assess the extent of naloxone distribution, in October 2010 the Harm Reduction Coalition e-mailed an online survey to staff members at the 50 programs then known to distribute naloxone. Follow-up e-mails and telephone calls were used to encourage participation, clarify responses, and obtain information on local, community-based programs. The survey included questions about the year the program began distributing naloxone, the number of persons trained in overdose prevention and naloxone administration,

FIGURE 2. Number (N = 188) and location* of local drug overdose prevention programs providing naloxone in 2010 and age-adjusted rates† of drug overdose deaths⁵ in 2008 — United States



* Not shown in states with fewer than three local programs.

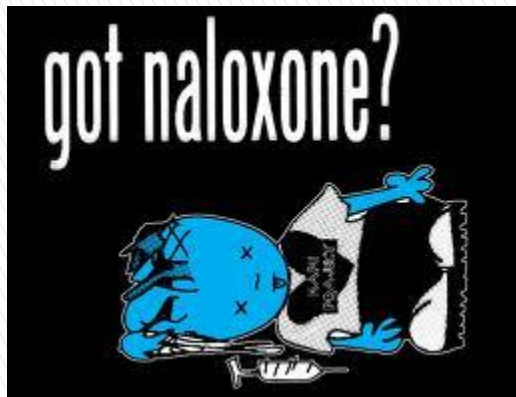
† Per 100,000 population.

Prescription Naloxone

- ▶ Prescribing Clinician
- ▶ Evaluation
- ▶ Medical Records
- ▶ Properly Labeled



Dope Project



Prescription Naloxone

- ▶ 53,032 clients trained and dispensed naloxone
- ▶ 10,171 clients reported overdose reversals
- ▶ State Legislation in 6 states to limit liability and/or confer Good Samaritan status

188 Local Programs



Prescription Naloxone

- ▶ Reproduced Internationally and in Multiple States
- ▶ State Legislation to Improve Access



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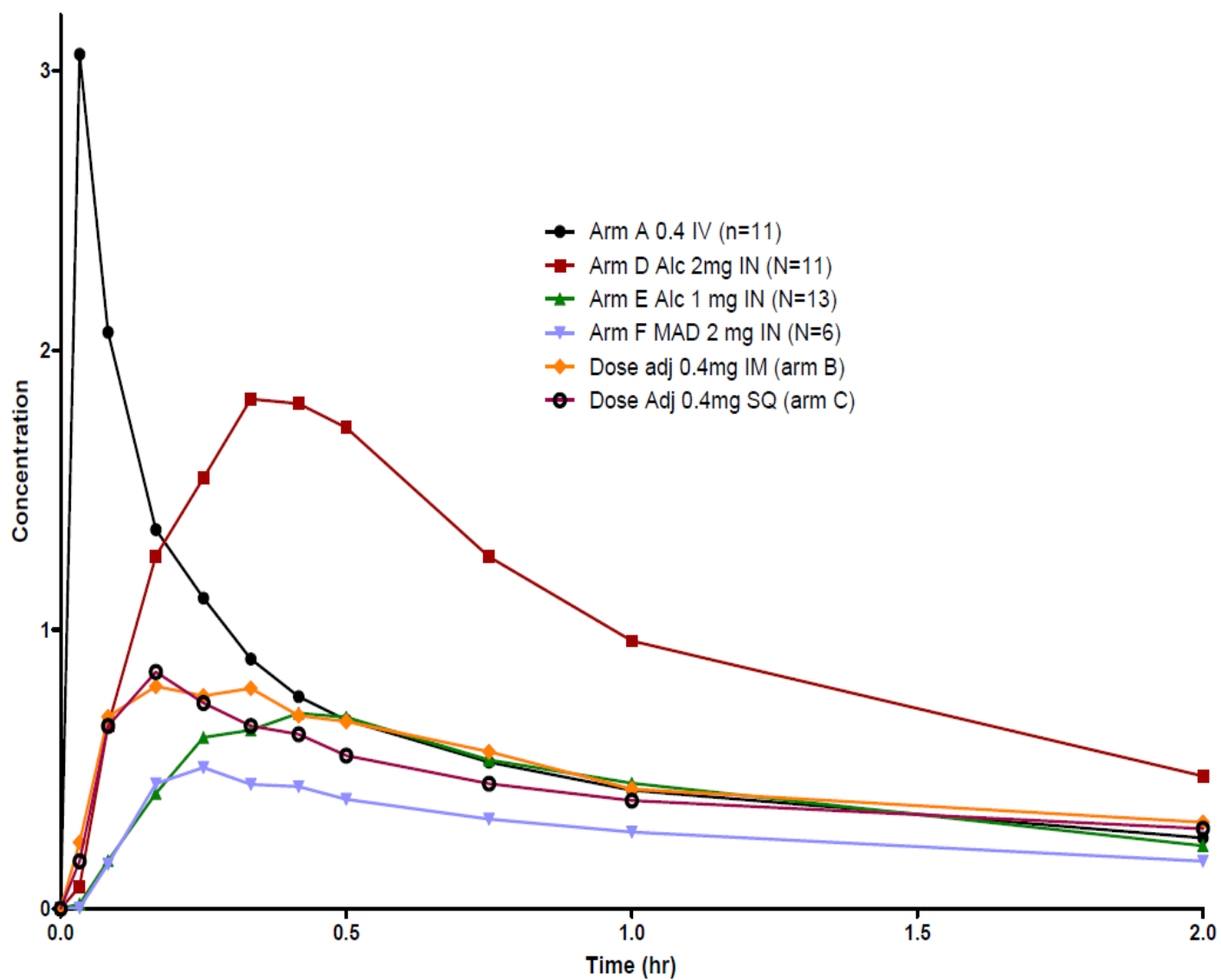
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NALoxone InVEstigation (N-ALIVE) Pilot Randomised Controlled Trial (RCT)	
ISRCTN	ISRCTN34044390
ClinicalTrials.gov identifier	
Public title	NALoxone InVEstigation (N-ALIVE) Pilot Randomised Controlled Trial (RCT)
Scientific title	Naloxone-on-release pilot randomised controlled trial (RCT), in two prison systems and 5,600 eligible prisoners
Acronym	N-ALIVE Pilot RCT
Serial number at source	MRC ref G0800012; MRC ID 85749; V1270808
Study hypothesis	<p>The hypothesis of the main trial is that giving naloxone on release to prisoners with a history of heroin use by injection will reduce heroin overdose deaths in this population by 28% in the first 12 weeks after release. The research questions addressed in this pilot study concern establishing whether prisons and eligible prisoners participate in the numbers expected and required in the main trial, field-testing the logistics of the main trial procedures, and obtaining qualitative data around post-release heroin use, overdoses witnessed or experienced, use of naloxone, and carriage of naloxone.</p> <p>MRC Clinical Trial Unit summary can be found at: http://www.ctu.mrc.ac.uk/research_areas/study_details.aspx?s=80</p> <p>As of 08/10/2010 this record has been extensively updated. At this point, the pilot study taking place in Scotland was withdrawn, and from this point the trial is taking place in England only. The anticipated trial dates were also updated; the initial dates were as follows: Initial anticipated start date: 01/04/2009</p>

Dose Normalized IV, IM, SQ (all 0.4 mg)



Street Drugs 2013

► Questions??